

# TGKX.123 - Roof Deck Constructions

## Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

---

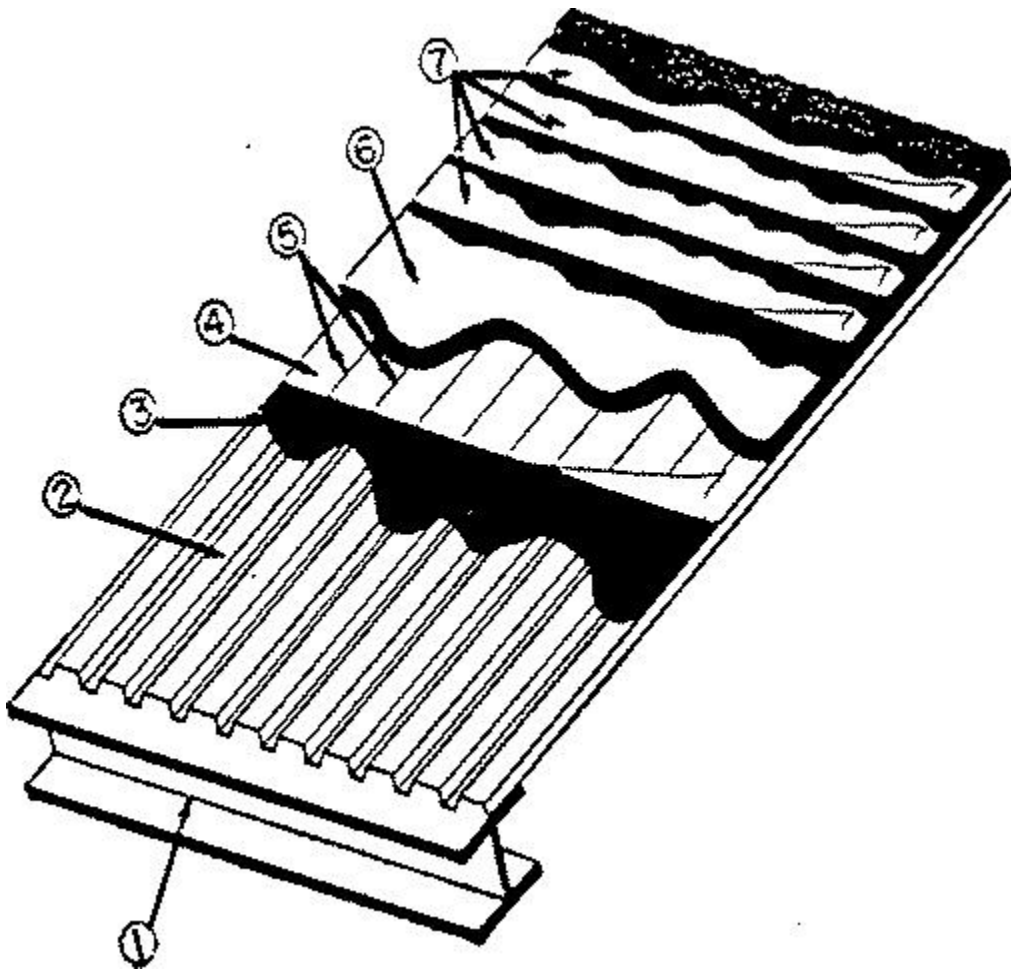
## Roof Deck Constructions

[See General Information for Roof Deck Constructions](#)

### **Construction No. 123**

September 30, 2021

**Uplift — Not Investigated**  
**Fire — Classified**



1. **Supports** — Structural steel or other materials acceptable to authorities having jurisdiction.

2. **Steel Deck** — No. 22 MSG minimum gauge; minimum fluted depth 1-1/2-in. with no perforations, welded or mechanically fastened to support in accordance with deck manufacturer's recommendations.

3. **Adhesive\*** — Classified by UL (refer to UL's on-line Certification Directory for the product categories Roof Deck Constructions or Roofing Systems.) Spread at the rate specified in the individual classifications. This adhesive is not used when the vapor barrier is omitted.

4. **Vapor Barrier\*** — (Optional) — Classified by UL (Roofing Systems, Base/Plysheet).

**CARLISLE SYNTEC SYSTEMS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC** ([View Classification](#)) — "Alutrix FR" or "VapAir Seal MD" self-adhered

**CERTAINTED LLC** ([View Classification](#)) — "Flintlastic VB" self-adhered

**FIRESTONE BUILDING PRODUCTS CO L L C** ([View Classification](#)) — "V-Force" self-adhered

**GAF** ([View Classification](#)) — GAF® SA Vapor Retarder

**JOHNS MANVILLE** ([View Classification](#)) — "JM Vapor Barrier SA" or "JM Vapor Barrier SAR", self-adhered. Steel Deck can be primed before Vapor Barrier application.

**SOPREMA INC** ([View Classification](#)) — "Sopravap'r" self-adhered

5. **Adhesive\*** — Classified by UL (Roof Deck Constructions.) Spread in ribbons spaced 6-in. on center at the rates specified in the individual classifications of the following manufacturers:

**TREMCO INC** ([View Classification](#)) — "FAS-N-FREE"

Mechanical fasteners may be used in lieu of this adhesive.

5A. **Adhesive\*** — (In lieu of Item 5) Classified by UL (Roofing Systems, Insulation Adhesive.)

**CARLISLE SYNTEC SYSTEMS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC** ([View Classification](#)) — "FAST 100 LV" and "Flexible FAST" Adhesives are applied by spraying or in beads at a coverage rate of approximately 100-ft<sup>2</sup>/gal.

**FIRESTONE BUILDING PRODUCTS CO L L C** ([View Classification](#)) — "I.S.O. Spray™ S" applied at 3/4-in. to 1 in. thick bead, 12-in. O.C. or "I.S.O Twin Pack" applied at 3/4-in. to 1-in. thick bead, 12-in. O.C. or "Firestone I.S.O. Stick" applied in a 5/8-in. to 1 in. thick bead, 12-in. O.C. at 170-200 lineal ft./gal.

**JOHNS MANVILLE** ([View Classification](#)) — "JM 2 Part Urethane Insulation Adhesive", "JM Roofing System Urethane Adhesive" or "JM One-Step Foamable Adhesive", applied in 3/4-1 in. beads, 12 in. OC.

**TREMCO INC** ([View Classification](#)) — Low Rise Foam Insulation Adhesive", "Low Rise Foam Insulation Adhesive (BG)", "Tremco LR Adhesive" and "Tremco Low Rise Green Foam Insulation Adhesive" applied at 1/4to 1/2 in. wide beads to the substrate or insulation board in ribbons spaced a minimum of 12 in. O.C.

6. **Insulation\*** — Classified by UL under Roof Deck Construction "Foamed Plastic" for the following manufacturers:

**ATLAS ROOFING CORP** ([View Classification](#)) — "ACFoam II", "ACFoam II Ultra", "ACFoam-II SL", "ACFoam III", "ACFoam IV," "Tapered ACFoam II", "ACFoam IXF", "ACFoam II NH", "ACFoam III NH", "Tapered ACFoam II NH", "Tapered ACFoam III NH", "ACFoam IIXF", "ACFoam® HD CoverBoard" or "ACFoam® HD CoverBoard-FR"

**CARLISLE SYNTEC SYSTEMS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC** ([View Classification](#)) — "Polyiso HP-H", "InsulBase Polyiso" or Tapered "Polyiso HP-H", "Tapered InsulBase Polyiso", "SecurShield Polyiso" or Tapered "SecurShield Polyiso", "SecurShield HD", "SecurShield HD Composite", "SecurShield HD Plus", "SecurShield HD Plus NH", "Tapered SecurShield", "InsulBase NH", "SecurShield NH", "SecurShield HD NH", "Tapered InsulBase NH", "Tapered SecurShield NH", "InsulBase RL", "SecurShield HD RL", "SecurShield RL"

**CERTAINTEEED LLC** ([View Classification](#)) — "FlintBoardH ISO", "FlintBoardH ISO T", "FlintBoardH ISO F", "FlintBoardH ISO Cold", "FlintBoardH ISO T Cold", "Tapered FlintBoardH ISO", "Tapered FlintBoardH ISO T", "Tapered FlintBoardH ISO F", "Tapered FlintBoardH ISO Cold", "Tapered FlintBoardH ISO T Cold"

**VIKING PRODUCTS GROUP INC** ([View Classification](#)) — "VPG-FLAT", "TAPERED VPG", "VPG-CG", "TAPERED VPG-CG", "VPG-HD", "VPG-HDCG"

**DIMENSIONAL METALS INC** ([View Classification](#)) — "DynaClad Polyiso", "DynaClad Polyiso NB"

**DERBIGUM AMERICAS INC** ([View Classification](#)) — "Derbiboard-h", "Tapered Derbiboard-h", "Derbiboard CA-h", "Tapered Derbiboard CA-h"

**DOW ROOFING SYSTEMS L L C** ([View Classification](#)) — "Dow Termico Polyisocyanurate Insulation", "Dow Termico Tapered Polyisocyanurate Insulation" or "Dow Termico ISO 3000"

**FIRESTONE BUILDING PRODUCTS CO L L C** ([View Classification](#)) — "ISO 95+CAN", "ISO95+FK", "ISO95+GL", "ISO95+GW", "Rhoflex Isocyanurate FK", "Rhoflex Isocyanurate GL", "Rhoflex Isocyanurate GW", "RetroGard HD" "ISOGARD HD", "ISOGARD HD Composite Board" or "ISO 95+GL NH"

**GAF** ([View Classification](#)) — "EnergyGuard™", "EnergyGuard™ Tapered", "EnergyGuard™ Ultra", "EnergyGuard™ Ultra Tapered", "EnergyGuard™ HD", "EnergyGuard™ HD Plus", "EnergyGuard™ NH", "EnergyGuard™ NH Tapered", "EnergyGuard™ NH Ultra", "EnergyGuard™ NH Ultra Tapered", "EnergyGuard™ NH HD", "EnergyGuard™ NH HD Plus", "EnergyGuard™ RA" or "Tapered EnergyGuard™ RA"

**HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC** ([View Classification](#)) — "H-Shield" or Tapered "H-Shield", "H-Shield-C" or Tapered "H-Shield-C", "H-Shield-CG" or Tapered "H-Shield-CG", "H-Shield Premier" or Tapered "H-Shield Premier", "H-Shield HD", "H-Shield HD90", "H-Shield HD Composite", "H-Shield HD Composite CG", "H-Shield NH" or Tapered "H-Shield NH", "H-Shield-C NH" or Tapered "H-Shield-C NH", "H-Shield-CG NH" or Tapered "H-Shield-CG NH", "H-Shield Premier NH" or Tapered "H-Shield Premier NH", "H-Shield HD NH", "H-Shield HD90 NH", "H-Shield HD Composite CG NH", "H-Shield RL" or Tapered "H-Shield RL", "H-Shield CG RL" or Tapered "H-Shield CG RL", "H-Shield HD RL"

**IKO INDUSTRIES LTD** ([View Classification](#)) — "IKOTherm", "IKOTherm III", "IKOTherm Tapered" or "CRCTherm" when installed over "IKOTherm", "IKOTherm III" or "CRCTherm".

**JOHNS MANVILLE** ([View Classification](#)) — "ENRGY 3®", "Tapered ENRGY 3®", "ENRGY 3® AGF", "Tapered ENRGY 3® AGF", "ENRGY 3® CGF", "Tapered ENRGY 3® CGF", "ENRGY 3® Foil Faced", "Tapered ENRGY 3® Foil Faced", "ENRGY 3® 25 PSI", "Tapered ENRGY 3® 25 PSI", "ENRGY 3® 25 PSI AGF", "Tapered ENRGY 3® 25 PSI AGF", "ENRGY 3® 25 PSI CGF", "Tapered ENRGY 3® 25 PSI CGF", "ENRGY 3® 25 PSI Foil Faced", "Tapered ENRGY 3® 25 PSI Foil Faced", "ValuTherm™", "Tapered ValuTherm™", "ValuTherm™ AGF", "Tapered ValuTherm™ AGF", "ValuTherm™ CGF", "Tapered ValuTherm™ CGF", "ValuTherm™ 25 PSI", "Tapered ValuTherm™ 25 PSI", "ValuTherm™ 25 PSI AGF", "Tapered ValuTherm™ 25 PSI AGF", "ValuTherm™ 25 PSI CGF", "Tapered ValuTherm™ 25 PSI CGF", "AP™ Foil Faced Sheathing", "Tapered AP™ Foil Faced Sheathing", "DiamondBack® Pre-Cut Crickets", "DiamondBack® Pre-Cut Miters", "R-Panel™", "Tapered R-Panel™", "R-Panel™ 25 PSI", "Tapered R-Panel™ 25 PSI", "ENRGY 3® FR", "Tapered ENRGY 3® FR", "ENRGY 3® 25 PSI FR", "Tapered ENRGY 3® 25 PSI FR"

**LEXSUCO 2010 CORP** ([View Classification](#)) — ISOLEX - B, ISOLEX II - B and ISOLEX Tapered - B.

**LOADMASTER SYSTEMS INC** ([View Classification](#)) — "Loadmaster Polyisocyanurate Insulation" or "Loadmaster Tapered Polyisocyanurate Insulation"

**MARTIN FIREPROOFING CORP** ([View Classification](#)) — "Perform-A-Deck I"

**MULE-HIDE PRODUCTS CO INC** ([View Classification](#)) — "Poly ISO 1" Tapered "Poly ISO 1", "Poly ISO 1-DWD", Tapered "Poly ISO 1-DWD", "Poly ISO 1-HD", "Poly ISO 1-HD90", "Poly ISO 1-HD-Composite"

**RMAX, A BUSINESS UNIT OF SIKA CORPORATION** ([View Classification](#)) — "Tapered TherमारooF-3", "Tapered TherमारooF FA-3", "MULTI-MAX-3"(MMA-3), "MULTI-MAX FA-3"(MMFA-3), "Ultra-Max", "Tapered Ultra-Max", "Ultra-Max Plus", "Ultra-Max HD" or "Tapered Ultra-Max Plus"

**SEAMAN CORP** ([View Classification](#)) — "FTR-Value H", "FTR-Value H Tapered", "FTR-Value H Glass Facer", "FTR-Value H Tapered Glass Facer", "FTR-Value HD", "FTR-Value HD FA", "FTR-Value HD Composite" or "Tapered FTR-Value HD Composite"

**SIKA SARNAFIL INC** ([View Classification](#)) — "Sarnatherm a", "Sarnatherm a CG", "Sarnatherm a CG Plus", "Sarnatherm-R Insulation", "Sarnatherm-R CG Insulation", "Sarnatherm-R Tapered Insulation", "Sarnatherm-R CG Tapered Insulation", "Sarnatherm Roofboard H", "Sarnatherm Composite Roofboard H", "Sarnatherm Roof Board-R"

**SIPLAST INC** ([View Classification](#)) — "Paratherm G", "Paratherm G Taper", "Paratherm NH", "Paratherm NH Tapered", "Paratherm NH CG", "Paratherm NH CG Tapered"

**SOPREMA INC** ([View Classification](#)) — "Sopra-ISO s", "Sopra-ISO s Tapered", "Sopra-ISO+ s", "Sopra-ISO+ s Tapered", "Sopra-ISO H+ s", "Sopra-ISO H+ s Tapered", "Sopra-ISO Premier+ r", "Sopra-ISO H r" or "Sopra-ISO H+ r"

**THE DOW CHEMICAL CO** ([View Classification](#)) — Type Thermax Sheathing

**THE DOW CHEMICAL CO** ([View Classification](#)) — "DOW Isocyanurate Board"

**TREMCO INC** ([View Classification](#)) — "Trisotech G" or "Trisotech CGF"

Or insulations which are Classified by UL (Roof Deck Construction, Building Units for the following manufacturers:

**ATLAS ROOFING CORP** ([View Classification](#)) — "ACFoam Nail Base Insulation", "ACFoam III Nail Base Insulation", "ACFoam Nail Base Insulation NH", "ACFoam III Nail Base Insulation NH" or "Vented R"

**CARLISLE SYNTEC SYSTEMS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC** ([View Classification](#)) — "Polyiso HP-HNB", "StormBase Polyiso ", "Polyiso HP-HP", "Polyiso HP-H Composite", Tapered "HP-HP", Tapered "Polyiso HP-H Composite", "Polyiso HP-HDD", "StormBase NH", "Polyiso HP-HDD NH", "Polyiso HP-H Composite NH"

**CERTAINTED LLC** ([View Classification](#)) — "FlintBoardH ISO NB", "FlintBoardH ISO WF" or "FlintBoardH ISO T WF"

**VIKING PRODUCTS GROUP INC** ([View Classification](#)) — "VPG-NB", "VPG-WF", "TAPERED VPG-WF"

**FIRESTONE BUILDING PRODUCTS CO L L C** ([View Classification](#)) — "Nailbase", "ISO95+Composite", "ISO95+Wood Fiberboard Composite" or "Rhoflex Isocyanurate Composite"

**GAF** ([View Classification](#)) — "ThermaCal®" or "ThermaCal® 1" or "ThermaCal® 2" roof insulation

**HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC** ([View Classification](#)) — "H-Shield-NB", "H-Shield-P", "H-Shield-RP", "H-Shield-WF", Tapered "H-Shield-P", "H-Shield-WF", "H-Shield-DD", "H-Shield-NB NH", "H-Shield-P NH", "H-Shield-RP NH", "H-Shield-WF NH", Tapered "H-Shield-P NH", "H-Shield-WF NH", "H-Shield-DD NH".

**HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC** ([View Classification](#)) — "H-Shield-NB", "H-Shield-NB NH", "Cool Vent" or "Cool-Vent II"

**JOHNS MANVILLE** ([View Classification](#)) — "ENRGY 3® Plus", "ENRGY 3® Gypsum Composite", "Fesco-Foam", "RetroFoam", "DuraFoam" or "Nailboard".

**KURT MFG CO** ([View Classification](#)) — "TechVENT Pro" and "TechBASE Pro"

**MARTIN FIREPROOFING CORP** ([View Classification](#)) — "Perform-A-Deck NI"

**RMAX, A BUSINESS UNIT OF SIKA CORPORATION** ([View Classification](#)) — "Thermarroof Composite-3", "Thermarroof Composite FA-3"

**SOPREMA INC** ([View Classification](#)) — "Sopra ISO" or "Sopra ISO+"

**SOPREMA INC** ([View Classification](#)) — "Sopra-ISO FB r", "Sopra-ISO FB r Tapered", "Sopra-ISO B r", "Sopra-ISO CV r"

**TREMCO INC** ([View Classification](#)) — "Trisotech G" or "Tapered Trisotech", "Trisotech CGF"

**VERSICO INC** ([View Classification](#)) — "MP-H", "VersiCore MP-H", "WeatherBond XP", "MP-HF", "WeatherBond XP-HF", "SecurShield", "Tapered MP-H", "Tapered VersiCore MP-H", "WeatherBond Tapered XP", "WeatherBond XFP", "Tapered MP-HF", "WeatherBond Tapered XP-HF", "Tapered SecurShield", "WeatherBond Tapered XFP", "SecurShield HD", "WeatherBond XFP HD Cover Board", "SecureShield HD Plus", "WeatherBond XFP HD Plus Cover Board", "SecurShield HD Composite", "WeatherBond XFP HD Composite", "MP-HNB", "DuraFaceR", "MP-HDD", "WeatherBond XP-NB", "Tapered MP-HWF", "WeatherBond Tapered XP-WF", "MP-HWF", "WeatherBond XP-WF", "SecurShield CD", "WeatherBond XFP CD", "VersiCore MP-H NH", "WeatherBond XP NH", "SecurShield NH", "WeatherBond XFP NH", "SecurShield HD NH", "WeatherBond XFP HD NH Cover Board", "SecurShield HD Plus NH", "WeatherBond XFP HD Plus NH Cover Board", "VersiCore RL", "SecurShield HD RL", "SecurShield RL", "Tapered VersiCore MP-H NH", "WeatherBond Tapered XP NH", "Tapered SecurShield NH", "WeatherBond Tapered XFP NH", "DuraFaceR NH" or "WeatherBond XP-NB NH".

6A. **Insulation** — (Optional — Not Shown) — Classified by UL under Roof Deck Construction "Foamed Plastic" for the following manufacturer:

**CARLISLE SYNTec SYSTEMS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC** ([View Classification](#)) — "Polyiso HP-HF", Tapered "HP-HF", "Polyiso HP-F NH", "Polyiso HP-F"

**HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC** ([View Classification](#)) — "H-Shield-F", "Tapered H-Shield-F", "H-Shield-F NH" or "Tapered H-Shield-F NH"

**MULE-HIDE PRODUCTS CO INC** ([View Classification](#)) — "Poly ISO 1" and Tapered "Poly ISO 1", "Poly ISO 1-HD-Composite"

**SOPREMA INC** ([View Classification](#)) — "Sopra-ISO F r", "Sopra-ISO F r Tapered"

**VERSICO INC** ([View Classification](#)) — "Polyiso MP-HF NH", "WeatherBond XP-F NH"

Note: Not for use with asphaltic roof coverings (Item 7).

6B. **Insulation** — (Optional — Not Shown) — One layer of minimum 1/2 in. thick perlite roof insulation board\* placed under the insulation (Item 6) and/or under the roof covering (Item 7).

6C. **Insulation\*** — (Optional — Not Shown) — Classified by UL under the Roof Deck Construction "Mineral and Fiber Boards" category, placed over the insulation (Item 6) and under the roof covering (Item 7).

**DERBIGUM AMERICAS INC** ([View Classification](#)) — "Fiberglas Roof Insulation"

**JOHNS MANVILLE** ([View Classification](#)) — "Fiber Glass Roof Insulation"

6D. **Barrier Board\*** — (Not Shown) — Minimum 1/4-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard" or "DensDeck Prime® Roofboard" or "DensDeck DuraGuard™ Roofboard" or 5/8-in. thick "DensDeck® Fireguard® Roofboard" or "DensDeck Prime® Fireguard® Roofboard", "DensDeck DuraGuard® Fireguard® Roofboard" or "DensDeck Prime® STORMX™ Roofboard" or minimum 1/4-in thick Owens Corning Specialty & Foam Products "Strataguard", or minimum 1/4-in. thick United States Gypsum Co. "SECUROCK® Roof Board" (Type FRX-G), SECUROCK® Glass-Mat Roof Board (Type SGMRX) or SECUROCK® Coated Glass Mat Roof Board (Type SGMRX) minimum 1/4 in. thick or minimum 1/4 in. National Gypsum "DEXcell Glass Mat Roof Board" or "DEXcell FA Glass Mat Roof Board". Fastened to steel deck with Tremco "FAS-N-FREE" adhesive spread in nominal 1/2-in. wide ribbons at every crest (6 in. OC), 1.5 to 2 gal./ft.<sup>2</sup> coverage.

6E. **Insulation** — (Optional — Not Shown) — Classified by UL under Roof Deck Construction "Foamed Plastic", minimum 1/4-in. thick. Placed over the insulation (Item 6) and under the covering (Item 7).

**JOHNS MANVILLE** ([View Classification](#)) — "Invinsa®", "Invinsa® FR", "ProtectoR™ HD", "SeparatoR™", "SeparatoR™ CGF"

7. **Roof Covering\*** — A built-up from hot mopped, cold application or single ply materials Classified by UL (see UL's On-Line Certification Directory under the product category Roofing Systems - TGFU). Authorities having jurisdiction should be consulted to which class of roof coverings will be acceptable in each location.

**\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Last Updated on 2021-09-30

---

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Follow-Up Service. Always look for the Mark on the product.

UL permits the reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Guide Information, Assemblies, Constructions, Designs, Systems, and/or Certifications (files) must be presented in their entirety and in a non-misleading manner, without any manipulation of the data (or drawings). 2. The statement "Reprinted from the Online Certifications Directory with permission from UL" must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice in the following format: "© 2022 UL LLC"